CLAIMS

1. A control and regulation system of a combustion unit (10) of the type comprising a combustion chamber (11) and a catalyst (40), said control and regulation system comprising:

- an acquisition device of signals proportional to functioning parameters characteristic of the functioning state of the combustion unit (10),
- an electronic data processing unit (30) connected to the signal acquisition device from which it receives signals,
- a control and regulation program associated with said electronic data processing unit (30),
- a first fuel distribution valve (20),
- a second air distribution valve (21),
- a data base associated with said electronic data processing unit (30),
- said electronic data processing unit (30) receives signals from the signal acquisition device, processes them and regulates the opening of the first valve (20) and second valve (21) to minimize the polluting emissions of CO and NOx of the combustion unit (10).

2. The control and regulation system of a combustion unit (10) according to claim 1, characterized in that said signal acquisition device comprises at least one

sensor capable of detecting at least one signal proportional to a functional parameter characteristic of the functioning state of the combustion unit (10).

3. The control and regulation system of a combustion unit (10) according to claims 1 and 2, characterized in that said signal acquisition device comprises a series of sensors suitable for detecting signals proportional to parameters characteristic of the functioning state of the combustion unit (10).

4. The control and regulation system of a combustion unit (10) according to claim 3, characterized in that said series of sensors comprises a set of temperature sensors.

5. The control and regulation system of a combustion unit (10) according to claim 4, characterized in that said series of temperature sensors comprises a first set of temperature sensors (60), a second set of temperature sensors (61) and a third set of temperature sensors (62).

6. The control and regulation system of a combustion unit (10) according to claim 3, characterized in that said series of sensors comprises pressure sensors (63) and pressure sensors (65).

7. The control and regulation system of a combustion unit (10) according to claim 4, characterized in that said series of temperature sensors comprises temperature

sensors (64) and temperature sensors (66).

8. The control and regulation system of a combustion unit (10) according to any of the previous claims, characterized in that said combustion chamber (11) comprises a first area (12), a second area (13) in which the catalyst (40) is housed, a third area (14), a first fuel inlet duct (71), a second inlet duct (72) of the air coming from the compressor 50 and an outlet duct (73) of the exhaust gases.

9. The control and regulation system of a combustion unit (10) according to claim 8, characterized in that said combustion chamber (11) comprises a third fuel inlet duct (74), an air distribution duct (75) and a main fuel duct (70).

10. The control and regulation system of a combustion unit (10) according to claim 9, characterized in that the main fuel duct (70) is connected to the first valve (20) which in turn is connected to the first fuel inlet duct (71) and to the third fuel inlet duct (74) to distribute the fuel in the first area (12) and second area (13) of the combustion chamber (11).

11. The control and regulation system of a combustion unit (10) according to claims 5 and 8, characterized in that said first series of temperature sensors (60) is positioned between the first area (12) and the second area

(13) close to the catalyst (40).

12. The control and regulation system of a combustion unit (10) according to claims 5 and 8, characterized in that the second series of temperature sensors (61) is positioned close to the catalyst (40) between the second area (13) and the third area (14) of the combustion chamber (11).

13. The control and regulation system of a combustion unit (10) according to claims 5 and 8, characterized in that the third series of temperature sensors (62) is positioned in the third area (14) of the combustion chamber (11).

14. The control and regulation system of a combustion unit (10) according to claim 8, characterized in that said combustion unit (10) is connected to a compressor (50) and a turbine (80) by means of the second compressed air inlet duct (72) and by means of the outlet duct (73), respectively.